

**WHAT IS CLAIMED IS:**

1           1.       A fixation plate kit for fixation of a distal radius fracture, the fixation plate kit  
2 comprising:

3               an elongated plate configured to be mounted to the volar surface of the distal radius  
4 and having a distal portion and a proximal portion, the distal portion extending from and  
5 forming an angle with the proximal portion, and including at least one tine extending from  
6 the distal portion; and

7               at least one tensioning device configured to pass through an opening in the elongated  
8 plate, through a channel in the radius, and to be tightenable to fix the elongated plate to the  
9 radius.

1           2.       The fixation plate kit of claim 1 wherein the distal portion includes at least  
2 one opening configured to receive the tensioning device.

1           3.       The fixation plate kit of claim 1 wherein the proximal portion includes at least  
2 one opening configured to receive the tensioning device.

1           4.       The fixation plate kit of claim 1 wherein the proximal portion is narrower than  
2 the distal portion.

1           5.       The fixation plate kit of claim 1 wherein the proximal portion has a width and  
2 includes a curved shape across the width and the width is configured to generally follow the  
3 curvature of the volar surface of the radius, whereby the proximal portion can be stably  
4 seated against the volar surface of the radius when the elongated plate is mounted to the  
5 radius.

1           6.       The fixation plate kit of claim 1 wherein the distal portion forms a generally  
2 T-shaped configuration with the proximal portion.

1           7.       The fixation plate kit of claim 1 wherein the distal portion forms an angle with  
2 the proximal portion, whereby the proximal portion follows the volar configuration of the  
3 distal head of the radius.

1           8.       The fixation plate kit of claim 7 wherein the angle between the distal portion  
2           and the proximal portion is between approximately 5° and 45°.

1           9.       The fixation plate kit of claim 7 wherein the angle between the distal portion  
2           and the proximal portion is between approximately 10° and 30°.

1           10.      The fixation plate kit of claim 7 wherein the angle between the distal portion  
2           and the proximal portion is between approximately 10° and 20°.

1           11.      The fixation plate kit of claim 7 wherein the angle formed between the distal  
2           portion and the proximal portion includes a gradual transition.

1           12.      The fixation plate kit of claim 1 wherein the tine extends from the distal  
2           portion at an angle with respect to the proximal portion of between approximately 75° and  
3           115°.

1           13.      The fixation plate kit of claim 1 wherein the tine extends from the distal  
2           portion at an angle with respect to the proximal portion of between approximately 85° and  
3           105°.

1           14.      The fixation plate kit of claim 1 wherein the tine extends from the distal  
2           portion at an angle with respect to the proximal portion of approximately 90°.

1           15.      The fixation plate kit of claim 1 wherein the kit further comprises a drill bit  
2           configured to drill a hole in bone tissue.

1           16.      The fixation plate kit of claim 1 further comprising a guide for drilling holes  
2           in bone to place the tine.

1           17.      The fixation plate kit of claim 1 wherein the guide includes at least one  
2           opening and an insert configured to be received in the opening.

1           18.      The fixation plate kit of claim 1 further comprising written instructions for  
2           use.

1           19.      The fixation plate kit of claim 1 further comprising an instructional video.

1           20.     The fixation plate kit of claim 1 further comprising a tensiometer mounted to  
2     the tine and configured to measure a tension in the tine.

1           21.     The fixation plate kit of claim 1 further comprising a monitor, wherein the  
2     tensiometer transmits a signal indicative of strain in the tine and the monitor is configured to  
3     receive the signal.

1           22.     The fixation plate kit of claim 1 wherein the elongated plate includes a  
2     therapeutic agent.

1           23.     The fixation plate kit of claim 22 wherein the therapeutic agent comprises one  
2     or both of a bone growth regulating protein and a platelet derived growth factor.

1           24.     The fixation plate kit of claim 1 wherein the kit further comprises one or both  
2     of a screw driver and an allen wrench.

1           25.     The fixation plate kit of claim 1 wherein the tine is integral with the elongated  
2     plate.

1           26.     The fixation plate kit of claim 1 wherein the distal portion includes at least  
2     one opening and the tine is configured as an articulating member passing through the  
3     opening.

1           27.     The fixation plate kit of claim 26 wherein the articulating member is  
2     configured to extend from the distal portion over multiple angles and orientations, and be  
3     inserted into a radius.

1           28.     The fixation plate kit of claim 26 wherein the first opening includes an  
2     outwardly extending rounded surface and the articulating member includes a head having a  
3     concave articulating portion configured to articulate against the rounded surface.

1           29.     The fixation plate kit of claim 28 wherein the articulating portion has an  
2     elongated shape.

1           30.     The fixation plate kit of claim 28 wherein the articulating portion has a  
2     hemispherical shape.

1           31.     The fixation plate kit of claim 1 wherein the tensioning device comprises a  
2 tie-band.

1           32.     The fixation plate kit of claim 1 wherein the tensioning device comprises a  
2 molly bolt system.

1           33.     The fixation plate kit of claim 1 wherein the tensioning device is configured to  
2 be under tension when mounted to the elongated plate.

1           34.     A fixation plate for the fixation of a distal radius fracture, the fixation plate  
2 comprising:

3                 an elongated plate configured to be mounted to the volar surface of the distal radius  
4 and having a distal portion and a proximal portion, the distal portion extending from and  
5 forming an angle with the proximal portion, and including at least one opening;

6                 at least one tine configured as an articulating member for passing through the  
7 opening; and

8                 at least one tensioning device configured to pass through an opening in the distal  
9 and/or proximal portion, through a channel in the radius, and to be tightenable to fix the  
10 distal or proximal portion to the radius.

1           35.     The fixation plate of claim 34 wherein the fixation plate is a component in a  
2 fixation plate kit comprising one or more of a drill bit configured to drill a hole in bone  
3 tissue, a guide for drilling holes in bone to place the tine, written instructions for use, an  
4 instructional video, a tensiometer mounted to the tine and configured to measure a tension in  
5 the tine, a monitor configured to receive a signal indicative of strain in the tine from the  
6 tensiometer, and a therapeutic agent.

1           36.     The fixation plate of claim 34 wherein the articulating portion has an  
2 elongated shape.

1           37.     The fixation plate of claim 34 wherein the articulating portion has a  
2 hemispherical shape.

1           38.     A method of repairing a distal radius fracture, the method comprising:

2 providing a fixation plate comprising an elongated plate configured to be mounted to  
3 the volar surface of the distal radius and having a distal portion and a proximal portion, the  
4 distal portion extending from and forming an angle with the proximal portion and one or  
5 more tines extending from the distal portion;

6 providing one or more tensioning devices configured to pass through one or more  
7 openings in the proximal portion and/or the distal portion, through a channel in the radius,  
8 and to be tightenable to fix the proximal portion to the radius;

9 forming one or more channels in the distal radius for receiving the one or more tines;

10 forming one or more channels in the radius for receiving the one or more tensioning  
11 devices;

12 placing the one or more tines in the one or more channels in the distal radius; and

13 placing the one or more tensioning devices in the one or more channels in the radius..

1 39. The method of claim 38 wherein the tine is integral with the fixation plate.

1 40. The method of claim 38 wherein the distal portion of the plate includes at least  
2 one opening and the tine is configured as an articulating member to pass through the opening,  
3 and placing the one or more tines in the one or more channels in the distal radius comprises  
4 passing the articulating member through the opening in the distal portion of the plate and into  
5 the channel.